Novel means of using cigarette packaging and cigarettes to communicate health risk and cessation messages

Novel means of using cigarette packaging and cigarettes to communicate health risk and cessation messages: A qualitative study

Abstract

Tobacco packaging provides an important means for governments to communicate the health risks associated with smoking. This study explores novel ways in which cigarette packaging, including cigarettes, can be used to communicate health risk and cessation messages. Eight focus groups were conducted with young women smokers (N=49), aged 16-24 years, recruited in Glasgow (Scotland). Each group was shown cigarette packs featuring Quick Response barcodes which link to stop-smoking websites if scanned by a smartphone; cigarette packs with audio messages explaining the risks associated with smoking or providing information on quitting; and cigarettes displaying the warning 'Smoking kills'. We explored perceptions of each of these designs. Each design received a mixed response but all were perceived to have some value in communicating risk or cessation messages. Many participants were not aware of how Quick Response barcodes worked and only a few actually used them, but they were nevertheless viewed positively, with the link to stop-smoking websites considered appropriate and educational. The packs which played audio messages were viewed as embarrassing and annoying, with this discomfort related to the perceived difficulty in avoiding the warning. The on-cigarette warning was considered a reminder of the health risks and off-putting given the perceived discomfort of smoking a cigarette displaying 'Smoking kills' in public. This study advances our understanding of how cigarette packaging and cigarettes could potentially be used to communicate with consumers.

Introduction

The World Health Organisation's Framework Convention on Tobacco Control (FCTC) is a global public health treaty intended to "protect present and future generations from the devastating health, social, environmental and economic consequences of tobacco consumption and exposure to tobacco smoke" (WHO, 2005, p.5). The World Health Organisation explains that a basic requisite for protecting present and future generations is to ensure that consumers are informed of the health risks associated with smoking (WHO, 2011). One way to inform of these risks is via the packaging, which marketers view as the 'medium par excellence' for reaching consumers (van de Laar & van den BergWeitzel, 2003). Most governments already use tobacco packaging as a platform to communicate with consumers, requiring tobacco manufacturers to display health warnings on packs. These on-pack health warnings are a cost-effective and credible means of communicating the risks associated with smoking and information on cessation (Hammond, 2011).

While most governments require warnings on cigarette packs, typically on the front and back of the pack, tobacco companies use the entire pack as a communications tool. Tobacco companies communicate with consumers through pack graphics and descriptors, pack structure (e.g. shape, style of opening) and other pack elements such as the tear-tape, cellophane, inner foil, inserts, barcodes and indeed the cigarette itself (Moodie & Hastings, 2011; Centre for Tobacco Control Research, 2012; Moodie et al., 2014). Tobacco industry documents highlight the importance of being creative with the pack (Kotnowski & Hammond, 2013) and packaging innovation can be highly lucrative (Hedley, 2012).

The invention shown by tobacco companies in respect to the packaging has not been matched by policy makers however. This is not to suggest that policy makers have failed to recognise the value of packaging for communicating the health risks of smoking to consumers. Indeed, the trend has been for larger health warnings on packs and the inclusion

of pictorial images; more than thirty countries require health warnings that cover fifty percent or more of both the principal display areas of packs and more than sixty countries require pictorial health warnings (Canadian Cancer Society, 2012). However, only in one country (Canada) are tobacco companies required to use, in addition to the on-pack warnings, pack inserts with messages explaining the benefits of quitting and encouraging smokers to quit.

In this study we explore some of the other ways in which the packaging could potentially be used to communicate the risks associated with smoking and benefits of cessation, beyond on-pack warnings and pack inserts. For our first design, we used cigarette packs featuring Quick Response (QR) barcodes. QR barcodes are two-dimensional barcodes originally designed for use in the automotive industry (in 1994) but now widely used as a marketing tool, which can be scanned with a smartphone to open a web address. QR barcodes have opened up new communications possibilities for tobacco companies, with Tvornica Duhana Rovinj (TDR) the first tobacco company to include QR barcodes on packs of Ronhill in Croatia in 2011; Imperial Tobacco included QR barcodes on packs of Davidoff in Ukraine the following year. As a growing number of consumers own smartphones, and use them to access web based information (Off Licence News, 2012), featuring QR barcodes on cigarette packs is a novel way for tobacco companies to communicate with consumers and promote their brands. We instead created QR barcodes on packs which linked to stop-smoking websites.

For our second design we created cigarette packs which played pre-recorded audio messages. While the visual appearance of packaging is paramount when trying to capture the attention of consumers, package designers also recognise the importance of tactile, olfactory and auditory cues in attracting consumers and enhancing the brand experience (Spence & Gallace, 2011). Cigarette packs that are textured or fragranced or make a sound when opened are now available (Moodie et al., 2014). The 'audition' packs currently available include, for

instance, packs that make a distinctive clicking noise when the lid is closed. Given the rapid evolution of tobacco packaging these first-generation audition packs may, in time, be supplanted by more sophisticated audition packaging, such as cigarette packs that play pre-recorded messages, music or other noises. Packs such as these are already on the market for other consumer products (Packaging Europe, 2013). Furthermore, package designers suggest that packaging which features audio messages for health purposes are also on the horizon, for instance pharmaceutical packs that provide pre-recorded verbal user instructions are predicted to be on the market by 2017 (Casey, 2013). As such, the use of cigarette packaging with audio health warnings would appear a viable future means of communicating with consumers.

For our final design, a health warning was included on the cigarette itself. According to the marketing literature, primary packaging comes into direct contact with the product itself (Ampuero & Vila, 2006). When applied to cigarettes, the product, namely tobacco, is packaged within filtered or unfiltered cigarette paper. Tobacco industry journals describe the cigarette as an increasingly important advertising medium for tobacco companies (Mapother, 2012). With coloured, patterned and capsuled cigarette filters, tactile and aromatic tipping papers, and exotic designs on the cigarette paper becoming more common, the cigarette is and will continue to be exploited as a promotional tool. Research has failed to explore the use of an on-cigarette warning however, even though this is recommended by the guidelines for Article 11 of the FCTC (WHO, 2008).

Our objective was to explore how young women smokers respond to these innovative ways of communicating health messages. Young women are a key target group for public health given high rates of smoking in the UK, the accelerating use of tobacco among women globally (WHO, 2012), and the fact that they are often the target audience for packaging and product innovation (Carpenter et al., 2005; Kotnowski & Hammond, 2013; Moodie et al., in press).

Methods

Design and sample

Focus groups were used given the exploratory nature of the study. The sample was 49 young women smokers, aged 16-24 years, recruited between May and September 2012 using purposive sampling. Market recruiters were instructed to recruit young women who smoked cigarettes (at least once a week) from different postcode sectors within Glasgow, via the door-to-door method or in the street, according to quota controls on age and social grade. Recruiters informed potential participants that the study was concerned with perceptions of tobacco packaging. Smoking prevalence among 16-24 year olds women in the UK is high, with 27% of 16-19 year old and 31% of 20-24 year old women smokers in 2009 (NHS Information Centre, 2012). Eight groups were conducted, segmented by age (16-17, 18-24) and social grade (ABC1, C2DE). Social grade was assessed via occupation, using the National Readership Survey social grading system, where ABC1 corresponds to the middle classes and C2DE the working class. Ethical approval was obtained from the marketing department at the University of Stirling.

Materials

Each group was shown packs and cigarettes that had been specially designed or modified for the study.

1) QR barcodes

Two cigarette packs displaying a QR barcode on either the side of the pack or on the reverse of the pack were created using an online QR barcode generator (see Figure 1). The first QR

barcode, when scanned with a smartphone, linked to the 'NHS Choices' website, which details ten benefits of quitting smoking, including whiter teeth, improved fertility and younger looking skin (http://www.nhs.uk/Livewell/smoking/Pages/Betterlives.aspx). The second QR barcode linked to the Scottish Government stop-smoking website, which features information on ways to quit and maintain a smoke-free lifestyle, and user-friendly features such as an addiction test and cost calculator (http://www.canstopsmoking.com/).

Figure 1: On-pack QR codes linking to stop-smoking websites

2) Audio pack warnings

Two cigarette packs were fitted with a small voice recording and playback unit, such as the ones found in 'talking' birthday cards, and constructed so that a pre-recorded message played when the lid was opened. We used one general message about available help, '*Get help to quit, call 0800 0224 332 for more information on the options available*', and one message tailored to young women, '*Smoking reduces fertility. If you are planning to have a child now or in the future smoking can reduce your chance of conception by up to 70 per cent*'.

3) Health warning on cigarettes

The surface area of a cigarette restricts the size of warning that can be displayed so we opted for a short warning, '*Smoking kills*', which is a warning that appears on the front of tobacco

packaging in the UK, and has been found to be a credible message (Wardle et al., 2010). The warning was displayed on the cigarette in four ways: 1) at the bottom of the filter, displayed horizontally, 2) on the cigarette paper, displayed horizontally, 3) on one side of the cigarette paper, displayed vertically, and 4) on both sides of the cigarette paper, displayed vertically, see Figure 2.

Figure 2: Cigarettes displaying warning *'Smoking Kills'*: from left to right, on base of filter, displayed horizontally on cigarette paper, vertically on one side of cigarette paper, vertically on both sides of the cigarette paper

Procedure

The groups were held in local community centres. Participants signed consent forms at recruitment and were reminded about confidentiality, the right to withdraw and the right not to respond to any question before the groups commenced. A semi-structured topic guide allowed the same topics to be discussed across groups whilst permitting flexibility in the discussions and prominent issues to be explored in greater depth (Barbour & Kitzinger, 1999). Participants were shown each of the packs and cigarettes that had been created for the study and asked about their general perceptions and perceived impact of each. For the cigarettes with the health warning, participants were shown all four cigarettes at the same time. For the two packs with QR codes, the moderator showed the participants one pack at a time. For each

pack, the moderator scanned the QR code with a mobile phone in front of participants to show how it works and the website each QR code linked to; participants were then shown the websites on a laptop or projector so that these could be viewed more clearly. Participants were shown the two 'talking' packs one at a time. Participants were debriefed at the end of each group about the harms associated with tobacco use. Each group lasted approximately ninety minutes and was recorded and transcribed verbatim.

Analysis

Each transcript was reviewed by two members of the research team with major themes and sub-themes identified through open coding (Braun & Clarke, 2006). To establish inter-rater reliability, findings were compared and any differences in interpretation resolved. Findings were then arranged to best fit the data: grouped into major categories reflecting key topics about which they educed information. Major categories identified were consistent across each measure: general perceptions of the communication measure; perceived impact on smoking behaviour; and most effective use/display of the health message.

Results

Stop-smoking websites accessed via on-pack QR Barcodes

General perceptions

Groups were shown two cigarette packs displaying a QR barcode which linked to either the Scottish Government or NHS Choices stop-smoking website. Not all participants had mobile phones equipped with devices compatible for reading QR barcodes or were aware of how QR

barcodes worked, e.g. "*I don't know how to work it*" (16-17, ABC1), and only a minority of those familiar with QR barcodes reported using them.

Responses to the QR barcodes ranged from complete disinterest, e.g. "*I just wouldn't go on it*" (16-17, C2DE), to appreciation: "*I think that is quite cool*" (16-17, C2DE). For some participants, having to download the app and scan the QR barcode to access information was viewed as a hassle: "*I would have to download an app for it so I probably considering there is not much reason to it... I think it's too much effort to scan the things*" (18-24, C2DE). However, even for those not impressed or interested in the QR barcodes, they were not opposed to them appearing on cigarette packs as they did not have to scan them: "*It's not as if you're forced to, like, scan it, so I don't think it's that bad*" (16-17, C2DE).

Mention was made of trying the QR barcodes out of curiosity, e.g. "*I think I would just scan it to see what it was*" (18-24, ABC1), particularly if bored. That the QR barcodes were novel and could be accessed at anytime was viewed as a positive. Despite this novelty, some commented that they would only be likely to repeatedly scan the QR barcodes if they changed on a regular basis: "*If I knew it was going to change, like, all the time, I would check it and stuff, but if I knew it was going to be the same you wouldn't bother*" (16-17, ABC1). It was suggested that if QR barcodes, which are still quite new in the UK, were more commonly used then they would be more useful: "*I guess if those were really common, maybe it would be really useful if, like, a lot of people use them*" (18-24, C2DE).

Perceived impact on smoking behaviour

Having a link on the pack to stop-smoking websites was considered appropriate and educational, even though many participants downplayed the risks associated with smoking or stated that they were not interested in or able to quit, e.g. "*I kind of think to myself I'll stop once I am an adult, kind of thing, like right now when you are at parties and stuff I think it's*

really difficult to stop when you are a teenager" (16-17, ABC1). Nevertheless, the view of the QR barcodes was that they may be helpful if trying to quit: "*If I wanted to stop smoking it would help me*" (18-24, ABC1). This desire to quit was considered a pre-requisite, but it was suggested that having a QR barcode on the pack could help prevent a delay in doing so: "*You could say, oh, I am going to do it* (quit)*, and you just put it off and then it would be right there, like, the link*" (16-17, C2DE). Although interest in quitting among the sample was generally low, there was a consensus that QR barcodes had the potential to help others, e.g. "*I think it would be useful for a lot of people yeah, but just not me personally*" (16-17, ABC1).

Scottish Government stop-smoking website

The Scottish Government stop-smoking website, featuring interactive tools such as a cost calculator and addiction test, was viewed favourably as it was 'fun' and had 'loads to do on it'. The cost of smoking was a pertinent issue for most participants, who were interested in the cost calculator as they felt they would be inclined to use it to find out how much smoking costs them: "*Because it's got like the cost calculator and all that stuff on it, I'd probably do all of that*" (18-24, ABC1). It was suggested that discovering how much smoking costs them would be 'heartbreaking', and also a way to get them to cut down given that this money could be put to better use: "*I think the cost one could be useful because, like, if you add it all up... it could make you like try and quit, like, cut down and stuff, because you would think, oh, that's a new outfit at the end of the month*" (16-17, ABC1).

NHS Choices website

Response to the NHS Choices website, which details ten benefits of quitting, was generally less positive as it contains 'too much writing' and was less likely to hold their attention: "*You probably wouldn't sit and read that*" (16-17, C2DE). Nonetheless, for some, being given the

facts about the many health benefits associated with stopping smoking was considered helpful: "*I think the facts help more, when people get told the facts that makes them want to stop*" (16-17, ABC1).

Audio Pack Warnings

General perceptions

Each group was shown two cigarette packs that played verbal health messages when the lid was opened. These packs were described as 'annoying', especially given that there would be a high frequency of exposure: "*It's the voice, it would drive you nuts especially if you were in and out the packet all day*" (18-24, C2DE). Comments were frequently made about attempting to avoid the messages by dismantling the packet, e.g. "*I would rip the top off*" (16-17, ABC1), removing the sound mechanism, e.g. "*I would just rip the chip out*" (18-24, C2DE), or discarding the packet and using a cigarette case, old pack or something else instead, e.g. "*If all the packets had that I'd take all my fags out of the packet and... even just put them in my bag if I didn't have anything else. I'd just throw the packet straight away*" (16-17, ABC1).

Perceived impact on smoking behaviour

The general response to the talking packs was negative, and indeed angered some participants, who believed it unnecessary and a step too far, while others equated it to a lecture on the dangers of smoking: "*Getting a lecture of somebody is not going to help you, it's just going to annoy you*" (16-17, ABC1). The veracity of the messages was also questioned, for instance about smoking reducing fertility: "*It's not even, well ok it might be a fact, but it's not a true definite known fact that it is going to happen to you*" (16-17, ABC1).

The resistance to the audio warnings was related to them being annoying, but also the inability to escape from the messages being communicated and because of the attention that it would attract from others. The packs were viewed as a source of embarrassment, and something that could deter them from opening the pack in public.

There were however a number of positive comments made in respect to the audio messages, such as the fact that they were seen as personal: "*Because it's speaking to you, and even though that is obviously on every single packet that they make, it's as if they are singling you out, speaking to you directly*" (16-17, C2DE). It was also felt that the talking packs could influence them, or others, to think about stopping smoking, e.g. "*It would probably get you to quit smoking because you wouldn't open your packet*" (16-17, C2DE). Similarly, it was suggested that the message might strengthen resolve to quit: "*See if when you're smoking your cigarette and your cigarette pack is talking to you, telling you to quit, quit, quit, like the whole time you're smoking it, then that would probably deter you*" (16-17, ABC1). The talking packs were not perceived as a potential motivator for change for everyone however, with mention made of becoming accustomed to them if they were the norm.

Smoking cessation and helpline message

The cessation message was deemed useful for reminding smokers of the helpline number: "*I think that one would help much more because see after a while you would actually know that number off by heart*" (16-17, ABC1). Although felt to be "*quite a good way to keep the number handy*" (18-24, C2DE), the cessation audio message was not considered something that would be likely to have any impact on their smoking behaviour. This was a similar response to the cessation website that could be accessed via the QR codes, suggesting that the 'quit' message did not resonate with this age group.

Reduced fertility message

The fertility message was considered relevant and more likely to capture attention than the cessation message: "*A message like that would have more of an effect on me*" (16-17, C2DE). Message impact varied according to the desire to have children. Those not planning to have children, or that already had children, appeared most unaffected by the message, or questioned its accuracy: "*I would end up arguing with it, well it didn't with me because I've got a child*" (16-17, ABC1). Those thinking of having children appeared most affected, e.g. "*See the first part, where it goes, 'if you are planning on having a child', you'd listen because you'd be like I want more information on this sort of thing*" (16-17, C2DE). The 16 to 17 year old age group were, in general, more concerned and put off by the fertility message than 18 to 24 year olds: "*I didn't know it would reduce fertility and stuff so, I don't know, I think you just wouldn't bother doing it* (smoking)" (16-17, ABC1).

On-cigarette warning

General perceptions

Each group was shown four cigarettes displaying the warning 'Smoking kills' (see Figure 2). Response to the on-cigarette warnings was, as with the QR codes and audio messages, mixed. Some felt that a warning on the cigarette would increase awareness of the potential health risks or serve as a constant visual reminder of these risks, for instance "*When you are talking and waving it about its Smoking kills, Smoking kills, Smoking kills, you can still see it*" (18-24, ABC1). Others viewed the warnings as 'stupid' or 'desperate' or claimed that smokers receive sufficient information about, and are cognisant of, the associated risks: "*You know smoking kills anyway*" (16-17, ABC1).

Perceived impact on smoking behaviour

Several participants said they would feel embarrassed displaying cigarettes with the warning 'Smoking kills' in public: "*I wouldn't smoke them in front of anybody*" (18-24, C2DE). It was suggested that this perceived social awkwardness may make smoking less appealing: "*I think it would definitely put me off... everyone can see that I am smoking a cigarette and it says 'Smoking kills', it's a bit of a, like, stupid image, so I think it would really put me off smoking*" (16-17, ABC1). The very presence of 'Smoking kills' on the cigarette was also considered an unwelcome reminder that "*You are smoking your life away*" (16-17, C2DE).

Best way to display the on-cigarette warning

The general view was that the warning printed once on the cigarette paper, whether horizontally or vertically, could be easily concealed or obscured when smoked. The warning on the filter was considered stronger because unlike the other displays it would be visible when opening the cigarette pack and would remain intact once the cigarette was finished: "*I would say that* (the warning on the filter) *would be the most worthwhile one because you are smoking the rest of them down and the message isn't going to be there anymore but on that one it's always going to be there. It's going to be in your ashtray*" (16-17, ABC1). It was however mentioned that the warning on the filter would not be visible when it was being smoked. The warning printed vertically on both sides of the cigarette paper was considered the most effective of the four, as it was most salient, e.g. "*It stands out more than the rest*" (18-24, C2DE), and would have greater visibility: "*When you are flicking your fag no matter what side you are actually holding your fag you are going to see it*" (18-24, C2DE).

Discussion

The first and second guiding principles of the FCTC highlight the importance of informing consumers of the health consequences of tobacco use and the need to take measures that promote cessation. One way to warn of the associated risks of tobacco use and promote cessation is via the packaging, which is accepted within the marketing literature as a crucial communications tool (Centre for Tobacco Control Research, 2012). We explored novel ways in which packaging could potentially be used to communicate risk and cessation messages, beyond the on-pack warnings and inserts recommended by the guidelines for Article 11 of the FCTC (WHO, 2008).

The first of our three designs involved the use of on-pack QR barcodes linking to stop-smoking websites, which were considered novel and even "*quite cool*". That this 'novelty' was a positive attribute for young people is consistent with tobacco industry documents (Wakefield et al., 2002). There was mention of trying the QR barcodes out of curiosity, and the link to a stop-smoking website was thought to be helpful for anyone thinking about quitting, although in our sample few intended to, or thought they were able to, quit. There are some concerns with QR codes however, such as the need to have a smartphone to scan them, which not all our sample had. This may change in the near future, however, given the exponential growth of smartphone ownership. Globally, there are now more than one billion smartphone users (Reisinger, 2012), with three-quarters of the UK population predicted to own smartphones by 2015 (Williams-Grut, 2013). A more serious problem concerns awareness and use. Some participants did not know about QR barcodes or how they worked, only a few participants actually used them and for some the effort of downloading and using the app was mentioned as a deterrent. Again, it is possible that this will change in the future as QR barcodes are increasingly being used for marketing, entertainment, retail, educational and health care purposes (Peck et al., 2014), and also within quit smoking services (Fujioka et al., 2012).

There was a generally negative response to the cigarette packs that played audio health messages. To avoid hearing these audio health messages, felt to be embarrassing, annoying or equivalent to a lecture, participants suggested discarding the pack and using an alternative means of storing the cigarettes, disabling the sound mechanism or cutting the pack open. These suggestions reflected a discomfort with the audio messages, which was not apparent for the QR barcodes, given that these audio messages would have high exposure and be difficult to avoid otherwise. As research has found that both youth and adult smokers are less likely than occasional smokers and non-smokers to pay attention to, or be dissuaded by, the visual on-pack health messages (Munafò et al., 2011; Maynard et al., 2013; Moodie et al., in press), then audio health messages may be a more effective means of communicating these messages to smokers. However, for those suggesting using an alternative means of storage to avoid the audio messages, for instance a cigarette case, this would not be beneficial to public health as they would then avoid both the audio and on-pack warnings; the use of cigarette cases is reported to be very low however, even in countries where packs feature large pictorial warnings (Wakefield et al., 2014). Further research is needed to explore the use of audio messages, with a range of populations.

In terms of the two audio messages used, the message concerning smoking reducing fertility created some trepidation among our sample, particularly for 16-17 year olds and those intending to have children in the future. That there was low awareness that smoking reduces fertility is particularly interesting given that there had been, at the time of the study, a warning explaining that smoking decreasing fertility on the back of cigarette packs for almost four years. Indeed, while awareness of the general risks associated with smoking was reported to be high, when provided with detailed health messages via the 'talking' packs and also the QR codes it was apparent that many young women were not aware of the breadth of these risks or the range of benefits associated with quitting. So even in a country reported to have the

strongest tobacco control in Europe (Joossens & Raw, 2011), and where the education system is ranked the sixth best in the developed world (Coughlan, 2013), young women smokers do not appear to be fully informed about the health risks, a basic requisite for protecting consumers and reducing tobacco use according to the World Health Organisation (WHO, 2005).

The last design explored was an on-cigarette health warning, which is mentioned in the guidelines for Article 11 of the FCTC, is reportedly being considered as a policy measure in Malaysia (Tobacco Journal International, 2012) and was discussed as a potential future measure in the UK House of Commons in November 2013 (Hansard, 2013). Given that every cigarette sold in Singapore must display the letters SDPC (Singapore Duty-Paid Cigarette), to show that they are not contraband, then the inclusion of a warning on every cigarette is clearly feasible. Our study provides some insight into consumer response to a health warning on cigarettes, and how a warning could be best positioned to increase salience. The idea of an on-cigarette warning was dismissed by most of our sample of young women smokers. For some however, it was viewed as a constant reminder of the associated health risks and considered off-putting, given that it would be visible to others when smoking in public. Some felt that it would decrease the appeal of smoking because of the perceived discomfort of being observed by others smoking a cigarette displaying the words 'Smoking kills'. The warning displayed vertically on both sides of the cigarette paper was viewed as the most difficult to avoid, being visible no matter how the cigarette was held. Future research should explore other possible ways in which warnings could be displayed on cigarettes.

The study has multiple limitations. Given the small sample size the findings cannot be generalised to all young women or indeed older women, males and non-smokers; although we deliberately focused on young women given the high smoking prevalence among this population. Nevertheless, research with other age groups, and also non-smokers, would be

fruitful. That the study materials were novel was unavoidable but may have influenced responses. Furthermore, if one or more of these measures was introduced to market participants may respond differently. Socially desirable responding is another possible limitation although we consider this unlikely given the varied responses to each of three designs.

As a result of comprehensive bans on tobacco advertising, promotion and sponsorship, tobacco companies are increasingly dependent on packaging to communicate with consumers. As tobacco companies have been particularly innovative with respect to packaging and use the entire pack to communicate with consumers (Centre for Tobacco Control Research, 2012; Hedley, 2012; Kotnowski & Hammond, 2013), then ensuring that consumers are adequately informed about the health risks of smoking and benefits of quitting via the packaging is more challenging. Just as tobacco companies do, we creatively exploited the packaging, including cigarettes, but to communicate pro-health rather than pro-tobacco messages. Future research should consider other novel ways of using packaging to communicate with consumers and the perceived impact on both children and older smoking and non-smoking populations.

Conflict of interests None.

References

Ampuero, O., & Vila, A. (2006). Consumer perceptions of product packaging. *Journal of Consumer Marketing*, *23*, 100-111.

Barbour, R., & Kitzinger, J. (1999). *Developing focus group, politics, theory and practice.* Thousand Oaks, California: Sage.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3,* 77-101.

Canadian Cancer Society (2012). *Cigarette package health warnings: international status report. 3rd edition*. 2012.

Carpenter, C. M., Wayne, G. F., & Connolly, G. N (2005). Designing cigarettes for women: New findings from the tobacco industry documents. *Addiction*, *100*, 837e51.

Casey, L. (2012). Is the outlook for smart and active packaging getting rosier? *Package Design,* 2 August 2012. Retrieved January 17, 2013, from http://www.packagedesignmag.com/content/is-the-outlook-for-smart-and-active-packaging-getting-rosier

Centre for Tobacco Control Research (2012). *The packaging of tobacco products.* Stirling: Centre for Tobacco Control Research, University of Stirling.

Coughlan, S. (2013). UK education sixth in global ranking. *BBC News* 2012. Retrieved 6 November, 2013, from http://www.bbc.co.uk/news/education-20498356

Ford, A., Moodie, C., & Mackintosh, A. M., & Hastings, G. (2013). How children perceive tobacco packaging and possible benefits of plain packaging. *Education and Health, 31,* 83-88.

Fujioka, N., Kobayashi, N., & Turale, S. (2012). Short-term behavioral changes in pregnant women after a quit-smoking program via e-learning: A descriptive study from Japan. *Nursing & Health Sciences, 14*, 304-311.

Hammond, D. (2011). Health warning messages on tobacco products: A review. *Tobacco Control*, *20*, 327-337.

Hansard (2013). *Tobacco packaging. 7 Nov 2013: Column 439.* Retrieved January 14, 2014, http://www.publications.parliament.uk/pa/cm201314/cmhansrd/cm131107/debtext/131107-0002.htm#13110786000001

Hedley, D. (2012). The changing future and a new vocabulary for the tobacco industry. *Tobacco Journal International, Tobacco Profiles*, 8-15.

Joossens, L., & Raw, M. (2011). *The Tobacco Control Scale 2010 in Europe.* Presentation at the 5th European Conference Tobacco or Health, Amsterdam, 28-30 March 2011. Retrieved January 14, 2014, from http://www.ensp.org/sites/default/files/TCS_2010_in_Europe_FINAL.pdf

Kotnowski, K., & Hammond, D. (2013). The impact of cigarette pack shape, size and opening: Evidence from tobacco company documents. *Addiction, 108,* 1658-1668.

Mapother, J. (2012). Putting a shine on tipping. *Tobacco Journal International, 2,* 77-83.

Maynard, O. M., Munafò, M.R., & Leonards, U. (2013). Visual attention to health warnings on plain tobacco packaging in adolescent smokers and non-smokers. *Addiction, 108,* 413-419.

Moodie, C., & Hastings, G. B. (2011). Making the pack the hero, tobacco industry response to marketing restrictions in the UK: Findings from a long-term audit. *International Journal of Mental Health and Addiction, 9,* 24.

Moodie, C., & Ford, A. (2011). Young adult smokers' perceptions of cigarette pack innovation, pack colour and plain packaging. *Australasian Marketing Journal, 19,* 174–180.

Moodie, C., Angus, K., & Ford, A. (2014). The importance of cigarette packaging in a dark market: The 'Silk Cut' experience. *Tobacco Control, 23,* 274-278.

Moodie, C., Mackintosh, A. M., & Hastings, G. B. (in press). Young people's response to
      pictorial warnings on the reverse panel of cigarette packs: A repeat cross-sectional
      study. *Tobacco Control.*

Moodie, C., Ford, A., Mackintosh, A. M., & Purves, R. (in press). Are all cigarettes just the
      same? Female's perceptions of slim, coloured, aromatized and capsule cigarettes.
      Health Education Research.

Munafò, M., Roberts, N., Bauld, L., & Ute, L. (2011). Plain packaging increases visual
      attention to health warnings on cigarette packs in non-smokers and weekly smokers
      but not daily smokers. *Addiction, 106,* 1505-1510.

NHS Information Centre (2012). *Statistics on smoking: England, 2010.* London: The
      Information Centre, NHS.

Off Licence News (2012). Apple of their eye. *Off Licence News* 4 May 2012.

Packaging Europe (2013). Dairylea moo promotion highlights impact. *Packaging Europe,* 16
      April 2013. Retrieved September 30, 2013, from
      http://www.packagingeurope.com/Packaging-Europe-News/52823/Dairylea-Moo-
      Promotion-Highlights-Impact.html

Peck, J. L., Stanton, M., & Reynolds, G. E. S. (2014). Smartphone preventive health care:
      Parental use of an immunization reminder system. *Journal of Pediatric Health Care,
      28*, 35-54.

Reisinger, D. (2012). Worldwide smartphone user base hits 1 billion. Retrieved January 15,
      2014, from http://news.cnet.com/8301-1035_3-57534132-94/worldwide-smartphone-
      user-base-hits-1-billion/

Spence, C., & Gallace, A. (2011). Multisensory design: Reaching out to touch the consumer.
      Psychology and Marketing, 28, 267-308.

Tobacco Journal International (2012). Malaysia looks to put health warnings on individual

cigarettes. *Tobacco Journal International, 2*, 12.

van de Laar, G., & van den Berg Weitzel, L. (2003). The power of structural design. *Admap, 38*, 40-42.

Wakefield, M., Morley, C., Horan, J. K., & Cummings, K. M. (2002). The cigarette pack as image: new evidence from tobacco industry documents. *Tobacco Control, 11,* 73–80.

Wakefield, M. A., Zacher, M., Bayly, M., Brennan, E., Dono, .J, Miller, C., Durkin, S. J., & Scollo, M. M. (2014). The silent salesman: an observational study of personal tobacco pack display at outdoor café strips in Australia. *Tobacco Control, 23,* 339-344.

Wardle, H., Pickup, D., Lee, L., Hall, J., Pickering, K., Grieg, K., Moodie, C., & Mackintosh, A. M. (2010). *Evaluating the impact of picture health warnings on cigarette packets.* London: Public Health Research Consortium; 2010.

Williams-Grut, O. (2013). Smartphones tipped to dominate UK by 2015 but Ireland storms ahead. *London Evening Standard,* 11 February 2013. Retrieved September 30, 2013, from http://www.standard.co.uk/business/business-news/smartphones-tipped-to-dominate-uk-by-2015-but-ireland-storms-ahead-8489971.html

World Health Organisation (2005). *WHO Framework Convention on Tobacco Control.* Geneva: World Health Organisation; 2005.

World Health Organisation (2008). *Elaboration of guidelines for implementation of Article 11 of the Convention. Third session of the Conference of the Parties to the WHO Framework Convention on Tobacco Control.* Durban, South Africa, 17–22 November 2008.

World Health Organisation (2011). *WHO report on the global tobacco epidemic, 2011: Warning about the dangers of tobacco.* Geneva: World Health Organisation; 2011.

World Health Organisation (2012). *WHO global report: Mortality attributable to tobacco.* Geneva: World Health Organisation; 2012.